

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing

(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/JP2004/018433

International filing date (day/month/year)
03.12.2004

Priority date (day/month/year)
05.12.2003

International Patent Classification (IPC) or both national classification and IPC
G09G3/34, G06F3/033, G09G3/36

Applicant
CANON KABUSHIKI KAISHA

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

J05R01 PCT/PTO 12 OCT 2005

International application No.
PCT/JP2004/018433

10/552590

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2004/018433

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	2, 3, 5, 7, 9
	No: Claims	1, 4, 6, 8
Inventive step (IS)	Yes: Claims	
	No: Claims	2, 3, 5, 7, 9
Industrial applicability (IA)	Yes: Claims	1-9
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following document/s/:
 - D1: EP-A-0 601 837 (SHARP KABUSHIKI KAISHA) 15 June 1994 (1994-06-15)
 - D2: US-A-5 461 400 (ISHII ET AL) 24 October 1995 (1995-10-24)
 - D3: US 2003/011869 A1 (MATSUDA YOJIRO ET AL) 16 January 2003 (2003-01-16)
2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claims 1 and 9 is not new in the sense of Article 33(2) PCT.
- 2.1 The document D1 discloses (- cf. independent claim 1 of the present application) a display apparatus (- Fig. 1) comprising:
 - a display panel (- 1 - Fig. 1) including pixels arranged in a matrix;
 - pixel electrodes (- island electrode 23 - Fig. 2) provided to the pixels, respectively,
 - and a common electrode (- common electrode Y - Figs. 1, 2) provided commonly to the pixels;
 - scanning lines (- common electrodes Y1-Yn - Fig. 1) and signal lines (- segment electrodes - X1-Xm - Fig. 1) for supplying a voltage to said pixel electrodes (- "a voltage approximately equal to the voltage across the segment electrode Xa and the common electrode Y1 (the voltage referred to as the "display voltage" hereinafter) is applied to the liquid crystals 21 in the area of the island electrode 23a." - col. 23, lines 49-54);
 - a drive circuit (- 2, 3, 6, 5 - Fig. 1) connected to said common electrode, said scanning lines, and said signal lines; and
 - a control circuit (- control circuit 13 - Fig. 1) for providing a signal to said drive circuit,wherein said control circuit selectively switches (- "A control circuit 13 controls [image display mode, pen input mode]" - col. 11, lines 7-12)
a display drive mode (- "Image display mode" - col. 23, line 21) in which said

display apparatus displays an image on said display panel through sequential scanning of said scanning lines and application of a variable voltage (- "display voltage" - col. 23, line 52) to pixels via said signal lines by said drive circuit and a rewriting drive mode (- "pen input mode" - col. 19, line 30) in which said display apparatus rewrites a part of pixels into black or white (- "turbid whitely" - col. 20, line 41, and "a part of image already written [...] can be erased." - col. 21, lines 7-10) through application of a voltage (- "not lower than V_{th2} " - col. 21, lines 11, 12), which is higher than a range of the variable voltage
(- i.e. the "display voltage" written to a pixel of D1 in the display mode comprises the sum of
- the variable image data voltage applied via the segment lines X,
plus
- the voltage applied to the selected common line Y,
to achieve voltages "not lower the V_{th1} and lower than V_{th2} " or "not lower the V_{th2} " [- i.e. see col. 23, lines 47-54 and col. 24, lines 21-28 of D1] wherein by definition, the voltage "which is not lower the V_{th1} and lower than V_{th2} " and "not lower the V_{th2} " which is applied in the input pen mode [- i.e. see col. 20, lines 36-41 and col. 21, lines 7-13 of D1] must be greater than the range of the variable voltage applied to the segment electrodes),
to the part of pixels on a scanning line selected by said drive circuit.

Accordingly, the subject matter of independent claim 1 is not considered novel over D1 within the meaning of Article 33(2) PCT.

- 2.3 In addition (- cf. dependent claims 4, 6 and 8), D1 further discloses corresponding features of:
an external input device (- input pen 10 - Fig. 1);
a pen input device (- input pen 10 - Fig. 1); and
liquid crystal display apparatus (- "phase transition type liquid crystals" - col. 15, line 12).

Accordingly, the subject matter of dependent claims 4, 6 and 8 is also not considered novel over D1 within the meaning of Article 33(2) PCT.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/JP2004/018433

3. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 7 does not involve an inventive step in the sense of Article 33(3) PCT.
- 3.1 In addition (- cf. independent claim 9 of the present application, and dependent claim 5), D2 which discloses corresponding features of:
- a display panel (- Figs. 1, 2, 9);
 - pixel electrodes (- 12 - Figs. 3-5, 18 - Fig. 5);
 - common electrodes (- 19a, 19b - Fig. 5; Y1 - Y100 - Figs. 1, 9);
 - scanning lines (- y1 - y100 - Figs. 1, 9);
 - signal lines (- 13 - Fig. 4, 8; x1 - x128 - Figs. 1, 9); and
 - a drive circuit (- 94 - Fig. 10),
- further discloses:
- a position detection device (- 92 - Fig. 10; Rx1 - Rx128, Ry1 - Ry100 - Fig. 9) for detecting a position designated by a positioning member (- 81 - Fig. 9) and outputting information on the detection position;
- wherein when there is no output of said position detection device (- i.e. light pen location sensing unit 92 receives no input from the pen), said control circuit selects a display drive mode in which a gradation image is displayed on said display panel and said drive circuit applies a variable voltage to pixels through said scanning and data lines to display the gradation image on said display panel
- (- insofar as D2 discloses the display in Fig. 9 is suitable for e.g. "an engineering workstation" [- col. 13, line 22] it is submitted that D2 implicitly discloses said display as employing a display drive mode), and
- when there is an output of said position detection device (- i.e. "a signal sent from the display panel 91 in response to the light from the light pen" - col. 12, lines 55, 56), said control circuit selects a rewriting drive mode in which a part of pixels of said display panel is rewritten into black or white and said drive circuit scans a part of said scanning lines and applies a voltage [..], to a part of pixels to rewrite the part of the pixels corresponding to the position designated by the pointing member
- (- " in response to the light from the light pen and a computer 93 recognizes a character, a figure, or a symbol based on the sensed data and displays the

recognized character or the like on the display panel 91 through the effect of a display control unit 94" - col. 12, lines 56-60).

As such therefor, the subject matter of independent claim 9 and dependent claim 5 is considered to comprise no more than the use of a technique, known from D2, of i.e.:
making notations on an active matrix tablet,
in an passive matrix display apparatus, known from D1, in which pixels have an analogous pen input (- see e.g. input pen 10 - Fig. 1 of D1).

Accordingly, in light of PCT Guidelines 13.14(a)(v), the subject matter of independent claim 9 and dependent claim 5 is not considered to involve an inventive step over a non-inventive combination of the teachings of D1 and D2 within the meaning of Article 33(3) PCT.

- 3.2 Furthermore (- cf. dependent claim 7), electrophoretic displays are known in the art, an example thereof being the electrophoretic display disclosed in D3 (- i.e. see e.g.).

As such therefor, the subject matter of dependent claim 7 is considered to comprise no more than the use of a technique, known from D1, of i.e.:
switching drive modes in a display in which pixels have a memory effect,
in an electrophoretic display apparatus, known from D2 at least, in which pixels have an analogous memory effect (- see e.g.).

Accordingly, in light of PCT Guidelines 13.14(a)(v), the subject matter of dependent claim 7 is not considered to involve an inventive step over a non-inventive combination of the teachings of D1 and D3 within the meaning of Article 33(3) PCT.

- 3.3 Dependent claims 2 and 3 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, see documents D1-D3 and the corresponding passages cited in the search report.